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Anyone dealing with analogue color films for photography or the moving image during the past sixty years will have repeatedly encountered certain companies and products. The technologies used are most likely to be associated with the product ranges of Kodak and Fuji and, in the Swiss context, perhaps also Tellko of Fribourg, which, from 1960 on, did business under the name Ciba. In addition to these companies, however, one name above all circulated in the German-speaking world throughout the twentieth century: that of Actien-Gesellschaft für Anilin-Fabrication, or Agfa for short. But even if in the eyes of many film and photography lovers Agfa is synonymous with its Agfacolor products, few are aware that for just under three decades, from the National Socialist era through to the postwar period, they were closely connected with very different political regimes, contexts, and sociocultural environments. Why were there different versions of the same Agfacolor product on the market, and what role did other color-film manufacturers play in disseminating the technical and aesthetic qualities of this type of color film?

Kodak versus Agfa

One of Agfa's most important achievements is considered to be the development of the first subtractive multilayer color film with non-diffusible dye couplers. Yet at the time when representatives of Agfa were presenting their first generation of color reversal film under the name Agfacolor Neu in Berlin on October 17, 1936,[1] their biggest American competitor, the Eastman Kodak Company, had already marketed a color film process that also used the principle of chromogenic development. The most significant difference was, however, that in Kodachrome the dye couplers necessary to form colors were not deposited in the individual layers sensitized for blue, green, and red—as was the case with Agfacolor Neu—but were added later in a controlled process during development. Both the developers responsible for Kodachrome, Leopold Mannes and Leopold Godowsky Jr., and the chemists who discovered the Agfacolor formulas, Wilhelm Schneider and Gustav Wilmanns, relied for their subtractive multilayer color films

on the knowledge and ideas of Rudolf Fischer and his Swiss colleague Hans Siegrist, as patented in 1911–1912. In contrast to Agfa, Kodak did not develop its Kodachrome home-movie and slide-film products for professional cinema use, so that Agfacolor went on to produce the first chromogenic negative-positive process for cinematography in 1938.

The sociopolitical and economic context of National Socialism played a particular role in the further development of Agfacolor, as the film historian Dirk Alt has demonstrated in his extensive research:[2] in the late 1930s, the private business interests of various manufacturers of color film—for example, Siemens and Agfa, which from 1925 to 1945 belonged to I. G. Farbenindustrie AG—did not coincide with the unified policy on the issue of color film crafted by the Reichsministerium für Volksaufklärung und Propaganda (RMVP; Reich Ministry of Public Enlightenment and Propaganda). Moreover, broad use of the new Agfacolor was further slowed by the outbreak of World War II. Alt comments that it was only after 1941 that the film business and politicians were able to come to an agreement that would permit joint planning in the extensive production of "color feature films [that would be] as representative and popular as possible" and the associated task of "developing the technical apparatus for its dissemination to the fullest extent."[3] Under the terms of this agreement, nine feature films were produced using Agfacolor by 1945, which ensured Agfa had full order books until the end of the war. As a result of increasing pressures and technical shortcomings, however, only some of the planned productions could be realized.

→ Fig. 1

Successors to Agfacolor in the East and West

In the spring of 1945, the armed forces of the Western Allies took control of the Agfa-Filmfabrik in Wolfen and confiscated the majority of the technical and scientific infrastructure before the site and the remnants of the former I. G. Farben company were transferred to the Soviet occupation zone. The BIOS, CIOS, and FIAT reports[4] revealed the formula for Agfacolor to the world and laid the foundation for the international and transnational involvement of numerous successors to Agfacolor: European, American, and Japanese film manufacturers such as Ferrania, Svema, Gevaert, Ansco, and Fuji initially adopted the structure of Agfacolor's photochemical components for their own color photographic and cinematographic products. In this way, from the 1950s onward, various color film processes using chromogenic development began to compete with one another on national and international markets. In addition to becoming more similar in their chemical and technical structure, the Agfacolor derivatives also grew closer in terms of the characteristics of their color aesthetics, so that the differences between the individual types of chromogenic color film tended to become subtler.[5]

Kodak, by contrast, was one of the few firms that did not produce a direct Agfacolor derivative. One reason for this is that the Agfacolor patent could only be used on the American market by Ansco/GAF, because its German-American predecessor, Agfa-Ansco, had already started producing color reversal film under the name Ansco Color in 1938. Its patents, in turn, were transferred to the US state in 1942.[6] Its patent continued to be protected, so that Kodak's path to an Agfacolor derivative remained blocked. Nevertheless, with its own products—Kodachrome, Ektachrome, and Eastman Color—Kodak continued to set new international standards of quality in the postwar years, especially in terms of the quality of color reproduction, speed of developing processes, sensitivity, and graininess.

Agfacolor from Wolfen or Leverkusen?

It was not, however, merely the formula for Agfacolor that lived on, in the form of derivative products made by other film manufacturers, but also the trademark itself—and in two versions at that. The dissolution of I. G. Farben's network gave rise to two competing firms: the Filmfabrik Wolfen under Soviet control, which resumed its production of color film soon after World War II ended, and the newly constructed film factory in Leverkusen in the British occupation zone—where Agfa had previously had a facility for making photographic paper—which began production in 1949. Both had assembled new staff teams for research and production to produce their own Agfacolor derivatives. In this way, they ensured that the new Agfacolor films from Wolfen competed with those of their former colleagues in Leverkusen as well as with similar color films from other countries during the Cold War. In 1964, the VEB (Volkseigener Betrieb, or "state-owned company") Filmfabrik Wolfen finally changed the trademark from Agfa to ORWO—an acronym for ORiginal WOlfen—and that same year, West German Agfa merged with Gevaert of Belgium. As a consequence, Agfacolor, which had existed for a good thirty years, vanished from the market. But the formula and aesthetic of subsequent Orwo-

→ Figs. 2+3

color and Orwochrom films from the GDR clearly had their origins in Agfacolor. By contrast, the successor company, Agfa-Gevaert in Leverkusen, adapted its formulas to Eastman color film and continued to produce its color film Gevacolor at its location in Mortsel, Belgium.[7]

Multilayer color films were produced not only in Europe and the US but also in Asia. Fuji Photo Film of Japan, which had originally (from 1949 to 1955) based its own chromogenic color reversal process, Fujicolor, on how Kodachrome functioned, began in 1955 to produce its own negative and positive films based on the Agfacolor patents and ten years later switched again to the Eastman Color process.[8] For a time, Japanese filmmakers had three Japanese color film stocks to choose from—Fujicolor, Sakuracolor, and Konicolor—in addition to the numerous foreign ones. This led to studios and filmmakers developing certain preferences for color film stock. Yasujirō Ozu, in particular, frequently stated his preference for the color spectrum of Agfacolor from Leverkusen and impressively manifested this in his films, such as HIGANBANA (EQUINOX FLOWER, JAP 1958), AKIBIYORI (LATE AUTUMN, JAP 1960), and SANMA NO AJI (AN AUTUMN AFTERNOON, JAP 1962).[9] In the same year as the last named, the buoyantly entertaining REVUE UM MITTERNACHT (MIDNIGHT REVUE, Gottfried Kolditz, GDR 1962) was shot in the GDR using Agfacolor from Wolfen. Although both processes had the same name, Agfacolor, they are not identical: it is necessary to look very closely to see which Agfacolor it is, since it was both produced and employed in different contexts.

→ Fig. 4

1. The suffix "Neu" ("new") was chosen to distinguish it from the series of granular and lenticular film stocks that Agfa had previously been marketing under the name Agfacolor. The abandonment of screen processes for film stock in 1938 marked the end of the "old" Agfacolor as well. See Dirk Alt, *"Der Farbfilm marschiert!": Frühe Farbfilmverfahren und NS-Propaganda, 1933–1945*, Munich: Belleville, 2011, 56.
2. Ibid.
3. Ibid., 410.
4. The reports of the British BIOS (British Intelligence Objectives Subcommittee) and CIOS (Combined Intelligence Objectives Subcommittee) and the American FIAT (Field Information Agency, Technical) made the Agfacolor technology accessible to its competitors.
5. See Gert Koshofer, *Color: Die Farben des Films*, Berlin: Spiess, 1988, 134.
6. See Jack H. Coote, *The Illustrated History of Colour Photography*, Surbiton: Fountain, 1993, 165.
7. See Koshofer, *Color* (see n. 5), 108.
8. See ibid., 114, 118.
9. See Max Tessier, "De la couleur dans les films japonais," in *Positif* (May 1992), 121–58, here: 153.

Fig. 1 GROSSE FREIHEIT NR. 7 (Helmut Käutner, GER 1944). Agfacolor, nitrate film, 35 mm. Credit: Friedrich-Wilhelm-Murnau-Stiftung, Bundesarchiv Filmarchiv. Photo: Barbara Flueckiger and Michelle Beutler

Fig. 2 [PFINGSTEN 1981] (GDR 1981). Orwochrom, UT15 reversal film, 16 mm. Credit: Filmmuseum Potsdam. Photo: Josephine Diecke
Fig. 3 [PFINGSTEN 1981] (GDR 1981). Orwochrom, UK17 reversal film, 16 mm. Credit: Filmmuseum Potsdam. Photo: Josephine Diecke

Fig. 4 REVUE UM MITTERNACHT (Gottfried Kolditz, GDR 1962).
Film print with vertically stretched frames of the film shot in the anamorphic widescreen process Totalvision. Eastman Special Order Print Film SO-886 of the film shot on Agfacolor Wolfen stock, 35 mm.
Credit: DEFA-Stiftung. Photo: Josephine Diecke.
Right: rectified image.